

Penn Cambria

GRADE 3 MATH CURRICULUM OUTLINE

The shift to the PA Core Standards has necessitated a change in our math curriculum. This document contains the outline of units and standards/goals for each unit for grade 3. The PA Core includes a heavy emphasis on application and multi-step problem solving. In addition, students must be able to show and/or explain their work as well as their reasoning.

Materials, resources, and assessments used in these units will be vetted by the grade level for alignment to the PA Core and to ensure strategies used are appropriate for our students. Resources might include those provided by the Common Core, the Pennsylvania Department of Education, the PDE Standards Aligned System, NY Engage, and Everyday Math.

Unit 1: Reviewing Multi-digit Addition and Subtraction / Fact Families / Place Value

Approximate time: 4 weeks

- Add two- and three-digit whole numbers and/or subtract two- and three-digit numbers from three digit whole numbers
- Order a set of whole numbers from least to greatest or greatest to least (up through 9,999)

Unit 2: Rounding

Approximate time: 2 weeks

- Round two- and three digit whole numbers to the nearest ten or hundred, respectively.

Unit 3: Introduction to Multiplication and Division (Units of 2-5 and 10)
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Approximate time: 4-5 weeks

- Interpret and/or describe products of whole numbers
- Interpret and/or describe whole-number quotients of whole numbers
- Use multiplication and/or division to solve word problems in situations involving equal groups, arrays, and/or measurement quantities
- Determine the unknown whole number in a multiplication or division equation related three whole numbers
- Apply the commutative property of multiplication
- Apply the associative property of multiplication
- Interpret and/or model division as a multiplication equation with an unknown factor
- Solve two-step word problems using the four operations.
- Represent two-step word problems using equations with a symbol standing for the unknown quantity.

- Assess the reasonableness of answers.

Unit 4: Money / Time / Elapsed Time

Approximate time: 4-5 weeks

- Compare total values of combinations of coins, and/or dollar bills less than \$5.00
- Make change for an amount up to \$5.00 with no more than \$2.00 change given
- Round amounts of money to the nearest dollar
- Tell, show, and/or write time to the nearest minute
- Calculate elapsed time to the minute in a given situation

Unit 5: Measurement, Fractions and Line Plots

Approximate time: 4-5 weeks

- Use a ruler to measure lengths to the nearest quarter inch or centimeter
- Generate measurement data by measuring lengths. Display data by making a line plot with appropriate units
- Demonstrate that when a whole or set is partitioned into y equal parts, the fraction $\frac{1}{y}$ represents 1 part of the whole and or the fraction $\frac{x}{y}$ represents x equal part of the whole
- Represent fractions on a number line
- Recognize and generate simple equivalent fractions
- Express whole numbers as fractions, and/or generate fractions that are equivalent to whole numbers
- Compare two fractions with the same denominator using the symbols $>$, $<$, $=$ and/or justify the conclusions

Unit 6: Multiplication and Division (Units of 0,1,6-9, and multiples of 10)

Approximate time: 3-4 weeks

- Multiply one-digit whole numbers by two-digit multiples of 10
- Solve two-step equations using order of operations
- Identify arithmetic patterns and/or explain them using properties of operations
- Create or match a story to a given combination of symbols (+, -, \times , \div , $<$, $>$ and $=$) and numbers
- Identify the missing symbol (+, -, \times , \div , $<$, $>$ and $=$) that makes a number sentence true

Unit 7: Area, Perimeter, Mass and Volume

Approximate time: 3-4 weeks

- Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.
- Measure areas by counting unit squares (sq cm, sq m, sq in, sq ft, etc)
- Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning
- Solve real-world problems involving perimeters of polygons (find perimeter, find unknown side length, same perimeter and different area, same area and different perimeter)
- Measure and estimate liquid volumes and masses of objects using standard and metric units
- Add, subtract, multiply, and divide to solve one-step word problems involving masses or liquid volumes that are given in the same units

Unit 8: Geometric Concepts

Approximate time: 2 weeks

- Explain that shapes in different categories may share attributes and that the shared attributes can define a larger category
- Recognize rhombi, rectangles, and squares as examples of quadrilaterals and/or draw examples of quadrilaterals that do not belong to any of these subcategories.

Unit 9: Collecting and Displaying Data

Approximate time: 2 weeks

- Complete a scaled pictograph and a scaled bar graph to represent a data set with several categories
- Solve one- and two-step problems using information to interpret data presented in scaled pictographs and scaled bar graphs
- Translate information from one type of display to another (pictographs, tally charts, bar graphs, and tables)

Additional time will be used to reinforce and extend skills based on the objectives above to be sure students have independently mastered the skills necessary for success in subsequent grade levels.